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JOHN C. GORECKI, ESQ. P.O BOX 553 CARLISLE, MA 01741			EXAMINER NGUYEN, HAI V	
			ART UNIT 2142	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 09/842,604	Applicant(s) HE, HAIXIANG	
	Examiner Hai V. Nguyen	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the communication received on 06 April 2007.
2. Claims 1-28 are presented for examination.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 10-17 are rejected under 35 U.S.C. 101 because the claims 26-28 recite

“a multicast database processing module for accessing...; a tracing module for retrieving...; a unicast database processing module ...” elements, which when read in light of specification amounts to nothing more than computer software void of a computer readable medium. See MPEP 2106(IV)(B)(1)

5. Claims 26-28 are rejected under 35 U.S.C. 101 because the claims 26-28 recite “means for accessing...; means for retrieving...; means for tracing...” elements, which when read in light of specification amounts to nothing more than computer software void of a computer readable medium. See MPEP 2106(IV)(B)(1).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-28 are rejected under 35 U.S.C. 102(e) as being anticipated by **Tang et al. U.S. patent # 6,839,348 B2.**

8. As to claim 1, Tang teaches a method of producing a multicast tree (*col. 15, lines 20-22, lines 40-42; col. 16, lines 6-8; col. 18, lines 47-54*) for an application configured to use a first multicast routing protocol (*PIM, col. 10, lines 15-43*) from existing protocol independent multicast routing information (*Figs. 3, 4*) in a network, at least some of the protocol independent multicast routing information (*Fig. 4, MVLAN Tags/IDs*) having been created from multicast information associated with an application configured to use a second multicast routing protocol (*VLAN encapsulation or tagging protocols, or VTP, col. 8, lines 21-22; col. 10, lines 63-67; col. 11, lines 1-5*), the network including a plurality of network devices (*Fig. 1, routers 122-146; sources 140-144, or 106, 108*) including at least a plurality of routers (*Fig. 1, routers 122-146*) that are members of a multicast associated with the multicast tree, a set of the routers each including a protocol independent multicast database (*Fig. 3, table 308*) containing protocol independent multicast routing information, the method comprising the steps of:

accessing a plurality of the protocol independent multicast routing databases (*Fig. 3, VLAN tag source 306, col. 9, lines 42-64; col. 10, lines 50-60; col. 13, lines 2-35; col. 22, lines 20-27, 46-50*);

retrieving at least a portion of the existing protocol independent multicast routing information (*Fig. 4, MVLAN Tags/IDs*) from each located protocol independent multicast database (*Fig. 3, creating shared-tree/source-specific route entry in table 308; col. 9,*

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lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11; col. 18, lines 16-20; col. 2, lines 20-27, 46-50);

tracing (*examining*) the retrieved existing protocol independent multicast routing information to form the multicast tree (*Fig. 3, creating shared-tree/source-specific route entry in table 308; col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

9. As to claim 2, Tang teaches, wherein the multicast includes a root node (*a group node*), the retrieved existing protocol independent multicast routing information being traced from the root node, the root node being one of the plurality of network devices (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

10. As to claim 3, Tang teaches, wherein the network implements the Internet Protocol, wherein the first multicast protocol is DVMRP (*col. 3, lines 15-25*), and wherein the second multicast protocol is PIM (*col. 3, lines 40-45; col. 10, lines 15-43*).

11. As to claim 4, Tang teaches, wherein each of the set of routers includes a protocol independent unicast database (*Fig. 1, the unicast routing table, col. 16, lines 45-49*) having network information, the method further including:

accessing a plurality of the protocol independent unicast databases (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*);

retrieving at least a portion of the network information from each accessed protocol independent unicast database (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15,*

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lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50); and

using the retrieved network information to form the multicast tree (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

12. As to claim 5, Tang teaches, wherein each protocol independent multicast database is a management information base (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

13. As to claim 6, Tang teaches, wherein at least one of the plurality of network devices includes a protocol dependent multicast database, the multicast tree being formed free from any data retrieved from the protocol dependent multicast database (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

14. As to claim 7, Tang teaches, wherein the retrieved protocol independent multicast information is traced by an application incorporating the Simple Network management Protocol (SNMP) (*col. 9, lines 42-64*).

15. As to claim 8, Tang teaches, wherein the set of routers includes no more than one of the plurality of network devices (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

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16. As to claim 9, Tang teaches, wherein the set of routers includes a first router and a second router, each protocol independent multicast database including a set of protocol independent multicast data, the set of protocol independent multicast data being different in the protocol independent multicast database in the first router than the set of protocol independent multicast data in the protocol independent multicast database in the second router (*Fig. 3, col. 9, lines 42-64; col. 13, lines 2-35; col. 15, lines 20-22, 38-42; col. 16, lines 6-11, 45-49; col. 18, lines 16-20; col. 2, lines 20-27, 46-50*).

17. Claim 10 corresponds an apparatus claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

18. Claims 11-17 introduce identical limitations of claims 2-8; therefore, they are rejected under the same rationale as in claims 2-8.

19. Claim 18 corresponds a computer readable medium claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

20. Claims 19-25 introduce identical limitations of claims 2-8; therefore, they are rejected under the same rationale as in claims 2-8.

21. Claim 26 corresponds an apparatus in means plus function claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

22. Claims 27-28 introduce identical limitations of claims 4-5; therefore, they are rejected under the same rationale as in claims 4-5.

23. Further references of interest are cited on Form PTO-892, which is an attachment to this action.

Response to Arguments

24. Applicant's arguments filed on 06 April 2007 have been fully considered but they are not persuasive.

25. In the remarks, Applicant argued in substance that:

Point (A), the prior art does not disclose that, "the MVLAN tags/IDs are protocol independent multicast routing information" as in independent claim 1 (Applicant's remark, page 4).

As to point A, Tang discloses in figures 2, 4 that, "the VLAN ID field 210 is preferably loaded with the numeric identifier of the VLAN associated with the access port on which message 200 was received. Upon receipt of tagged message 200, a receiving device examines the contents of the VLAN ID field 210 and the destination address in field 208. If the message 200 is destined for a LAN coupled to the receiving device, the VLAN ID field 210 is stripped off and the resulting un-tagged message is driven onto the respective access port" (Tang, col. 7, line 47 – col. 8, line 2; col. 12, lines 4-14; col. 10, line 45 – col. 11, line 5). Since the VLAN or MVLAN identifiers are used to identify what VLAN or MVLAN domain(s) the multicast messages are distributed to through the access port, it is clearly that the VLAN IDs or MVLAN IDs are utilized as protocol independent multicast routing information.

Point (B), the prior art does not disclose "an application configured to use a second multicast routing protocol" as in independent claim 1 (Applicant's remark, page 4).

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As to point (B), Tang discloses that, "Upon initialization, the VLAN assignment engines at each MNDs 122-126 may be configured to generate and transmit PIM hello messages as defined by the PIM-SM protocol specification. The VLAN assignment engine preferably generate and transmit one or more PIM Hellos for each VLAN domain, which include the corresponding VLAN designation as new option (col. 10, lines 15-29)", "The VLAN tag source 306 is preferably pre-configured by the network administrator with a block of numerical identifiers that are available for selection by the MND 122 as VLAN designations. The administrator preferably ensures that there is no overlap among the VLAN regions. Alternatively, the MNDs may executes an extension to one or more protocols, such as the VLAN Trunk Protocol (VTP) from CISCO Systems, Inc. in order to obtain and release VLAN designation dynamically. The multicast VLAN control message generator 312 generates and transmits one or more advertisement messages so that the intermediate network devices within VLAN region 102 can associate the new red-blue-green MVLAN-ID to their ports that are currently associated with the red, blue or green VLAN designation" (page 10, lines 55 – col. 11, line 5; col. 19, lines 5-17).

Since the VLAN assignment engines in MND, upon initialization, are configured to generate and transmit one more PIM hellos for each VLAN domain and then alternatively the MND may execute an extension to one or more protocols, like VLAN Trunk Protocol (VTP) in order to obtain and release VLAN designation dynamically, it is clear that the MND is configured to use the PIM as the first protocol upon its initialization, and then alternatively the MND is also configured to execute an extension

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to one or more protocols as the second protocol to obtain and release VLAN designations dynamically.

Point (C), the prior art does not disclose that, "storing the routing information in a protocol neutral format, a network management application may read the information regardless of what routing protocol was used to establish the multicast tree" (Applicant's remarks, page 7).

As to point (C), Tang discloses that, "an MND creates a PIM shared-tree route entry in its multicast routing table 308 storing the routing information including a shared-tree route entry, {*, G}, where "*" is a wildcard value representing the source address and "G" is a variable representing destination address (Fig. 3, col. 8, line 59 – col. 9, line 9; col. 15, lines 15-34). Since the shared-tree route entry in the multicast routing table representing a value and a variable to be filled in, it is clear that the routing information in the table is in a protocol neutral format.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai V. Nguyen whose telephone number is 571-272-3901. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hai V. Nguyen
Examiner
Art Unit 2142

HV


JASON CARDONE
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